

I discussed this matter with the late Dr Alan Charig on several occasions, and have had the benefit of studying the teeth of a wide range of iguanodontid dinosaurs, including the European forms *Iguanodon atherfieldensis*, *I. bernissartensis* and *I. fittoni*, as well as *I. lakotaensis* from North America, *Ouranosaurus nigeriensis* from North Africa and *Altirhinus kurzanovi* from Mongolia, and the more distantly related *Camptosaurus* from North America/England. My view is that the circumstances suggested by Sues (that tooth characters may emerge that are likely to prove diagnostic for the teeth described originally by Mantell) are remote in the extreme. The degree of variability exhibited in the teeth of all the animals mentioned above, both within the jaw at any one time (positional variation) and as a consequence of changes due to growth (ontogeny), are such that teeth alone cannot be used reliably for taxonomic assignment.

In view of this I disagree with Sues's objections and support the proposal of Charig & Chapman, which modifies what I originally (1986) hoped would prove to be a 'safe' solution to the problem of the nomenclatural vulnerability of the famous dinosaur name *Iguanodon*.

**Comments on the proposed conservation of the names *Hydrosaurus gouldii* Gray, 1838 and *Varanus panoptes* Storr, 1980 (Reptilia, Squamata) by the designation of a neotype for *H. gouldii***

(Case 3042; see BZN 54: 95-99, 249-250; 55: 106-111, 173-176)

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1. The authors of the application (Prof Robert Sprackland, Prof Hobart Smith and Dr Peter Strimble) have stated (BZN: 54: 95) that 'the purpose of this application is to conserve the near universal usage of the name *Varanus gouldii* (Gray, 1838) for the sand monitor or Gould's goanna which is found over most of Australia, and of *V. panoptes* Storr, 1980 for the yellow spotted monitor from areas of western and northern Australia, New Guinea and Indonesia (family VARANIDAE)'. The authors' alleged extent of usage for the names *V. gouldii* and *V. panoptes* is demonstrably false, making their application fundamentally flawed, and for this reason I oppose it.

2. The history of the taxonomy of the species originally described as *Varanus gouldii*, *V. panoptes* (a junior synonym of *gouldii*), and *V. flavirufus* (originally described as a subspecies of *gouldii*) is not in dispute and is summarised by Böhme (1991) and the authors of the application. In his 'Taxonomic notes on the status of *Varanus gouldii* and *V. panoptes*', Sprackland (1995) accurately summed up the taxonomy of *V. gouldii* as follows:

- (i) Legal questions concerning the taxonomic validity of the names of monitor (goanna) lizard species in Australia require a status report on the taxonomic validity of the names in question, and an explanation of the reasons for that status. The two names involved are *Varanus gouldii* (Gray, 1838) and *Varanus panoptes* Storr, 1980. The taxonomic history of each name is provided, together with pertinent references to the International Code of Zoological Nomenclature (called 'the Code' below), which provides the internationally accepted standards for naming and use of names in zoological science.

- (ii) *Varanus gouldii* was originally named by John Edward Gray in 1838. A single adult specimen (1030 mm) was prepared as a dry mount in the British Museum (Natural History), London, where it remains today. Gray placed the species in the genus *Hydrosaurus*, which was a preoccupied name for a genus of unrelated agamid lizards from Indonesia. Subsequently the species was placed in *Varanus*.
- (iii) The designation of a specimen as a type was unusual until the 20th century, so Gray did not specify a name-bearing holotype for his new species. The Code specifically states that in the absence of a physical type, the specimen used to prepare an illustration serves as the type even if not specifically designated by the author, and the illustration itself becomes an ideotype.
- (iv) German taxonomist Robert Mertens reviewed the Australian monitor lizards in 1958, and by comparing the illustration provided by Gray with catalogue entries and the mounted specimens in the BMNH, rediscovered the original specimen (BMNH 1946.9.7.61) and designated that lizard the lectotype. The Code allows designation of a lectotype when a series of animals used by an author to name a species does not include a single, published record for a holotype; a subsequent revision may then designate one of those animals as the single, name-bearing lectotype. Mertens' action was both justified and appropriate. Wolfgang Böhme of the Zoological Museum of Alexander Koenig, Bonn, Germany, and I have examined the lectotype and Gray's illustrations, and fully confirm that BMNH 1946.9.7.61 is the specimen used by Gray to name *Varanus gouldii*.
- (v) It is important to note that a lectotype is chosen from among specimens that still exist and are known to have been examined by an original describer. Subsequently, they are not subject to replacement or invalidation by the Commission. Only a neotype is subject to review, and then only if the presumed lost holotype is later rediscovered. No neotypes were designated in describing any of the monitor lizards under discussion.
- (vi) The name *Varanus panoptes* was used by Glenn Storr in 1980 to name a new species of Australian monitor. However, in so doing, Storr made the taxonomic error of not examining the types of related monitor species. The animals he named *Varanus panoptes* are actually the same as that named *Varanus gouldii*, and the Code specifically states that such a name can only be regarded as a junior synonym of the older name. The frequent subsequent use of the name *panoptes*, primarily by Australian authors, does not constitute valid grounds for suppressing the 132-year older name *gouldii*. Neither is *panoptes* retainable on the basis of common usage, as *gouldii* is a well-known, well-defined and long-used name.
- (vii) Böhme (1991) provided a revised taxonomic list for the monitors in question:
  - Varanus panoptes panoptes*
  - V. panoptes rubidus*
  - V. panoptes horni*
  - V. gouldii flavirufus*

= *Varanus gouldii gouldii*

= *V. gouldii rubidus*

= *V. gouldii horni*

= *V. flavirufus*.

3. Nothing in the application changes the position as earlier stated (above) by its most senior author.

4. To avoid any ambiguity, throughout this comment the animal that the authors refer to as *panoptes* will here be discussed as *gouldii*, in line with Böhme (1991). The animal identified as *flavirufus* by Böhme is based on specimen number 53271 in the Natur-Museum Senckenberg, Frankfurt am Main, Germany. I refer to other authors' works in terms of animals identified and photographs of specimens, with particular emphasis on locality information given in those texts.

5. The name *panoptes* was used in error by Storr in 1980 when he described a monitor lizard, failing to realise that the same animal had been described some years earlier as *V. gouldii*. A number of authors (all of whom were cited by the authors of the application), in particular those from Western Australia, used the name *panoptes* to describe what had been known as *V. gouldii* over the following 16 years in various publications.

6. In 1991, Böhme published a paper showing that *panoptes* was a junior synonym of *gouldii* and therefore *panoptes* should not be used. As Böhme's paper became more widely known, usage of the name *panoptes* declined to reach the present situation where it is now hardly, if ever, used, while the original names *gouldii* and *flavirufus* for the related species have near universal usage.

7. Recent (post-1994) publications that have correctly used the names *gouldii* and *flavirufus* in the same publication, confirming their general usage, include Bennett (1995, 1996, 1998) and de Lisle (1996), which are probably the most widely circulated general books on varanids on the market. Notable is how these publications have also not used the incorrect name *panoptes* except as identifying it as the invalid junior synonym. Davie (1995), Hoser (1996a, 1996b; the latter with a circulation so far in excess of 6000 copies), also used *gouldii* and identified *panoptes* as a junior synonym. Other recent and widely circulated publications correctly identifying *gouldii* include Frauca (1973), Griffiths (1984), Schmida (1985), Greer (1997) and Lemm (1997). Combined, there are far more publications correctly adopting the name *V. gouldii* than the very few incorrectly using *V. panoptes*.

8. The only five known publications to have used the incorrect name of *panoptes* since 1994 were cited by the authors of the application. One of those, Steele (1996), indicated that the name *panoptes* is in dispute (p. 84), stating that some believe the name should be subsumed into *gouldii*. Böhme's (1991) publication was cited in the references of Steele's work. Card & Kluge (1995), while adopting *panoptes* rather than *gouldii*, noted that their view is not universally accepted. Therefore none of these authors can be taken to wholly support the position of the application. The CITES and threatened-reptile lists, produced by the World Conservation Monitoring Centre (1993, 1996) and referred to by the application authors, are nothing more than that, simply lists (where the name *panoptes* is used), and should be given little weight. While I concede that Switak (1996) incorrectly used the name *panoptes* to describe *gouldii*, the same publication, *Reptiles* magazine, has since published at least one other article (by Lemm, 1997) correctly identifying the same species as *gouldii*. Notable is that *Reptiles* has the largest circulation of any herpetological magazine or journal, making common



usage favor the retention of *gouldii* and *flavirufus*. Press, Brock & Andersen (1995), while using the name *panoptes* in favor of *gouldii*, did not publish this information in a widely circulated or herpetological publication, making its impact minimal, particularly when compared with the herpetological publications that have used the correct names. Thus it can be seen that any common usage argument for resurrecting *panoptes* based on recent (post-1994) publications is invalid.

9. Not only has Böhme's (1991) paper been widely circulated among herpetologists, including those likely to publish the name of the lizard presently known as *gouldii*, but so too have articles on the subject, based on Böhme's paper and subsequent failed litigation (Hoser, 1996a), which can be found and downloaded in full on high-usage websites on two internet servers, one active since late 1996 and the other since mid-1997.

10. The issue of *Reptilian* magazine which contained my article (Hoser, 1996a) was distributed by the Victorian Herpetological Society to all members as part of a promotion by the British publishers. The VHS membership exceeds 700 Australia-wide and includes the overwhelming majority of publishing herpetologists in Australia as well as institutions such as The Australian Museum, The University of Sydney, Melbourne Zoo, Australian Reptile Park, overseas members and others. The VHS has more members than all other professional and amateur herpetological societies in Australia combined. Over a thousand more copies of the same magazine were distributed in the USA and Europe. Therefore the fact that *panoptes* is an invalid name is commonly known and any attempt to reverse this would create immense confusion.

11. The application further argues that the name *flavirufus* is virtually unused for the lizards the authors seek to rename *gouldii*. That simply isn't true. Authors who have correctly used *flavirufus* include Bustard (1970), Worrell (1970), Hoser (1989), Böhme (1991), Sprackland (1992), Bennett (1995, 1996, 1998), de Lisle (1996) and Steele (1996). Included in this list are some of the most widely circulated publications on the subject spanning a period of nearly three decades. Most of these also have correctly captioned photographs of both forms.

12. In Australia and elsewhere junior synonyms, many of which are in widespread use, are routinely discarded by authors when the correct senior name becomes known. The herpetological community in Australia and elsewhere has had little trouble adapting to these name changes. A perusal of H.G. Cogger's benchmark books on Australian herpetology (Cogger, 1975, 1979, 1986 and 1992) feature changed names with such regularity that any possible common usage argument for maintaining the name *panoptes* simply has no credibility. Also see Cogger, Cameron & Cogger (1983) for details of now subsumed junior synonyms for Australian reptiles and amphibians, many of which previously had wide usage.

13. Cogger & Shea, in their comment supporting the application (BZN 55: 106-111), have given 'evidence' in relation to the lectotype of *V. gouldii* that is largely speculative, not conclusive and therefore should be dismissed as far as this application is concerned.

14. I formally request that the application be rejected in total, with the current, valid and most widely used names *Varanus flavirufus* and *V. gouldii* being reaffirmed as the correct names for, respectively, the widespread species and that with the more disjunct range.

## Acknowledgements

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## Additional references

- Bustard, H.R. 1970. *Australian lizards*. 162 pp. Collins (Australia), Sydney.
- Cogger, H.G. 1975. *Reptiles and amphibians of Australia*. 584 pp. Reed, Terry Hills, New South Wales.
- Cogger, H.G. 1979. *Reptiles and amphibians of Australia*, Ed. 2. 608 pp. Reed, Terry Hills, New South Wales.
- Cogger, H.G. 1986. *Reptiles and amphibians of Australia*, Ed. 4. 688 pp. Reed, Frenchs Forest, New South Wales.
- Davie, N. 1995. Editorial. *Pantherosaurus*, 1(1): 13.
- Frauca, H. 1973. *Australian reptile wonders*. 101 pp. Rigby, Adelaide.
- Greer, G. 1997. Field Notes: Australia 1996. *Reptile and Amphibian Magazine*, 45: 58–62.
- Griffiths, K. 1984. *Reptiles and frogs of Australia*. 96 pp. View Productions, Sydney.
- Hoser, R.T. 1989. *Australian reptiles and frogs*. ix, 238 pp. Pierson, Mosman, New South Wales.
- Hoser, R.T. 1996a. Australia – land of goannas and bureaucrats. *Reptilian*, 4(4): 7–21.
- Hoser, R.T. 1996b. *Smuggled-2: wildlife trafficking, crime and corruption in Australia*. xx, 260 pp. Kotabi, Doncaster, Victoria.
- Lemm, J. 1997. Reptile dreamtime. *Reptiles*, 5(9): 32–45.
- Schmida, G. 1985. *The cold-blooded Australians*. 208 pp. Doubleday, Sydney.
- Sprackland, R. G. 1995. Taxonomic notes on the status of *Varanus gouldii* and *Varanus panoptes*. *Pantherosaurus*, 1(1).
- Worrell, E. 1970. *Reptiles of Australia*. xv, 169 pp. Angus & Robertson, Sydney.

## (2) Anthea Gentry

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Mr Hoser's comment (above) contains a number of factual errors or misinterpretations concerning both the Code and the application. These have been pointed out to Mr Hoser but he has requested that his comment be printed without alteration. Many of the errors relating to the Code originate in Sprackland's (1995) 'Taxonomic notes on the status of *Varanus gouldii* and *Varanus panoptes*' prepared for a Court case in Australia involving both these species, and quoted by Mr Hoser.

The points below are cited as they arise in Mr Hoser's text, following his paragraph numbers.

2(ii). There are many old specimens of *Varanus gouldii* in the collections of the Natural History Museum in London, not just a single specimen, but it is very difficult to ascertain which were present in 1838. The earliest catalogue is that of Gray (1845a) which contains material clearly collected after 1838.

2(iii). There is no Article in the Code stating that 'in the absence of a physical type, the specimen used to prepare an illustration serves as the type even if not specifically designated by the author, and the illustration becomes an ideotype', and the word 'ideotype' does not appear. Furthermore, Gray (1838) did not mention any specimens and his illustration was not published until some years later (1845b).

2(iv). By the time Gray's (1845b) illustration appeared there were a number of collections in the Natural History Museum. There is no certainty that the figured specimen is one studied by Gray in 1838. Shea & Cogger (BZN 55: 106–111) have provided evidence that Mertens's (1958) designated specimen is unlikely to have been

an original specimen seen by Gray (1838) when he described *V. gouldii* and, if this is the case, the designation by Mertens (1958) of it as a lectotype is invalid.

2(v). There is no provision in the Code stating that a lectotype, once selected, is 'not subject to replacement or invalidation by the Commission. Only a neotype is subject to review, and then only if the presumed lost holotype is later rediscovered'. On the contrary, the Commission may use its plenary powers to set aside original type material and designate a neotype as a means of preserving the stability of usage of a name for a taxon.

2(vi). The species named *Varanus panoptes* by Storr (1980) is not taxonomically the same as the geographically widespread species long understood as *V. gouldii*. The application does not propose to 'suppress' the name *gouldii*, but rather to maintain *gouldii* for the widespread species and *panoptes* for the northern, more restricted, species.

3. In their application, as originally submitted in 1996, Sprackland et al. proposed that Böhme's (1991) nomenclatural arrangement be followed, and they asked the Commission to endorse this. However, Sprackland was then unaware that the status of type material could be set aside by the Commission (see 2(v) above) and, after correspondence, the revised application was published proposing the conservation of both the names *gouldii* and *panoptes* in the senses accorded them by the majority of authors. It was proposed that this should be effected by setting aside Mertens's (1958) lectotype designation and substituting an appropriate neotype of *V. gouldii*.

5. Storr's (1980) proposal of the name *V. panoptes* was for a distinct species, taxonomically separate from the widespread species known as *V. gouldii*. There was no need for him to examine the specimen proposed by Mertens as the lectotype of *V. gouldii*, although in the light of what has happened since it is unfortunate that he did not do so.

6–11. References were included in the application (para. 7) to demonstrate the continuing usages of *gouldii* and of *panoptes* as proposed by Storr. Another application, also to conserve the names *gouldii* and *panoptes* in their traditional senses, was submitted by G.M. Shea & H.G. Cogger only slightly later than that by Sprackland et al., and included extensive lists of references for both names. These lists consisted of 57 references for the use of *gouldii* since 1991, and 58 references for the use of *panoptes* since its publication (13 references from 1994 to 1996, when the list was compiled). It is not correct to say that 'as Böhme's paper became more widely known usage of the name *panoptes* declined to reach the 1997 situation where it is now hardly, if ever, used, while the original names *gouldii* [in the sense of the restricted species] and *flavivirgatus* for the related [widespread] species have near universal usage'.

Gray, J. E. 1845a. *Catalogue of the specimens of lizards in the British Museum*.

Gray, J. E. 1845b. *The zoology of the voyage of H.M.S. Erebus & Terror, under the command of Captain Sir James Ross, during the years 1839 to 1843*.

**Comment on the proposed conservation of *Coluber infernalis* Blainville, 1835 and *Eutaenia sirtalis tetrataenia* Cope in Yarrow, 1875 (currently *Thamnophis sirtalis infernalis* and *T. s. tetrataenia*; Reptilia, Squamata): proposed conservation of the subspecific names by the designation of a neotype for *T. s. infernalis* (Case 3012; see BZN 55: 224–228)**

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